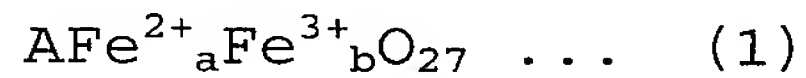


## CLAIMS

1. A process for producing a ferrite sintered body having a main composition of the following formula (1):



wherein  $1.5 \leq a \leq 2.1$ ,  $14 \leq a+b \leq 18.5$ , and A is at least one element selected from Sr, Ba and Pb, the process comprising:

a calcining step of obtaining a calcined body from a raw material compound;

a first milling step of milling the calcined body to a predetermined size;

a heat treatment step of holding fine powder obtained from the first milling step for a predetermined time in a predetermined temperature range in an atmosphere having an oxygen concentration of 10% by volume or less;

a second milling step of milling the fine powder which has undergone the heat treatment step to a predetermined size;

a step of wet compacting the fine powder which has undergone the second milling step in a magnetic field; and

a sintering step of sintering the compacted body obtained by the wet compacting.

2. The process for producing a ferrite sintered body according to claim 1, wherein the heat treatment step is carried out in a temperature range of 600 to 1,200°C.

3. The process for producing a ferrite sintered body according to claim 1, wherein the heat treatment step is

carried out in a temperature range of 700 to 1,000°C.

4. The process for producing a ferrite sintered body according to claim 1, wherein the predetermined time is between 1 second and 10 hours.

5. The process for producing a ferrite sintered body according to claim 1, wherein the oxygen concentration is 1% by volume or less.

6. The process for producing a ferrite sintered body according to claim 1, wherein the atmosphere is a nitrogen gas atmosphere.

7. The process for producing a ferrite sintered body according to claim 1, wherein the milling conditions for the second milling step are more relaxed than the milling conditions for the first milling step.

8. The process for producing a ferrite sintered body according to claim 1, wherein the fine powder which has undergone the first milling step and the fine powder which has undergone the second milling step have a mean particle size of between 0.08 and 0.8  $\mu\text{m}$ .

9. The process for producing a ferrite sintered body according to claim 8, wherein the mean particle size is between 0.1 and 0.2  $\mu\text{m}$ .

10. The process for producing a ferrite sintered body according to claim 1, wherein a carbon-containing material is added after performing the calcining step but prior to conducting the wet compacting.

11. The process for producing a ferrite sintered body according to claim 1, wherein during the heat treatment step ultrafine particles of 0.05  $\mu\text{m}$  or less are eliminated or decreased.

12. A process for producing a ferrite sintered body comprising:

a first milling step of milling a calcined body in which  $\text{Fe}^{2+}$  and  $\text{Fe}^{3+}$  are formed into a milled powder having a mean particle size of between 0.08 and 0.8  $\mu\text{m}$ ;

a particle growth step of reacting some of particles constituting the milled powder with each other while maintaining the  $\text{Fe}^{2+}$  and  $\text{Fe}^{3+}$  to grow the particles; and

a second milling step of milling the milled powder having undergone the particle growth step to a mean particle size of between 0.08 and 0.8  $\mu\text{m}$ .

13. The process for producing a ferrite sintered body according to claim 12, wherein the particle growth step is carried out under a non-oxidative atmosphere.

14. The process for producing a ferrite sintered body according to claim 1 or 12, wherein the ferrite sintered body

is a W-type ferrite sintered body.

15. The process for producing a ferrite sintered body according to claim 14, wherein the ferrite sintered body comprises 50% or more of W-phase in terms of molar ratio.